



1600

RAW SEQUENCE LISTING

DATE: 05/15/2003

PATENT APPLICATION: US/09/554,151B

TIME: 13:13:40

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05152003\I554151B.raw

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MAY 22 2003

TECH CENTER 1600/2900

4 <110> APPLICANT: Van Doorn, Leen-Jan
 5 Quint, Wim
 7 <120> TITLE OF INVENTION: Detection and Typing of the iceA Gene of
 8 Helicobacter pylori
 10 <130> FILE REFERENCE: INNOG3.001APC
 12 <140> CURRENT APPLICATION NUMBER: 09/554,151B
 13 <141> CURRENT FILING DATE: 2000-07-25
 15 <150> PRIOR APPLICATION NUMBER: PCT/EP98/07106
 16 <151> PRIOR FILING DATE: 1998-11-06
 18 <150> PRIOR APPLICATION NUMBER: EP97870180.3
 19 <151> PRIOR FILING DATE: 1997-11-06
 21 <160> NUMBER OF SEQ ID NOS: 82
 23 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 21
 27 <212> TYPE: DNA
 28 <213> ORGANISM: Helicobacter pylori
 30 <400> SEQUENCE: 1
 31 ggattacagc taggtaatgg g
 33 <210> SEQ ID NO: 2
 34 <211> LENGTH: 20
 35 <212> TYPE: DNA
 36 <213> ORGANISM: Helicobacter pylori
 38 <400> SEQUENCE: 2
 39 gtgtttttaa ccaaagtatc
 41 <210> SEQ ID NO: 3
 42 <211> LENGTH: 20
 43 <212> TYPE: DNA
 44 <213> ORGANISM: Helicobacter pylori
 46 <400> SEQUENCE: 3
 47 ccgatgtagt tcattrcaac
 49 <210> SEQ ID NO: 4
 50 <211> LENGTH: 20
 51 <212> TYPE: DNA
 52 <213> ORGANISM: Helicobacter pylori
 54 <400> SEQUENCE: 4
 55 ctatagccas tytctttgca
 57 <210> SEQ ID NO: 5
 58 <211> LENGTH: 23
 59 <212> TYPE: DNA
 60 <213> ORGANISM: Helicobacter pylori
 62 <400> SEQUENCE: 5
 63 aagcttgtaa ygaygagaaa cgc

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```

65 <210> SEQ ID NO: 6
66 <211> LENGTH: 21
67 <212> TYPE: DNA
68 <213> ORGANISM: Helicobacter pylori
70 <400> SEQUENCE: 6
71 gttgggtata tcacaattta t                                21
73 <210> SEQ ID NO: 7
74 <211> LENGTH: 21
75 <212> TYPE: DNA
76 <213> ORGANISM: Helicobacter pylori
78 <400> SEQUENCE: 7
79 ttrccctatt ttctagtagg t                                21
81 <210> SEQ ID NO: 8
82 <211> LENGTH: 22
83 <212> TYPE: DNA
84 <213> ORGANISM: Helicobacter pylori
86 <400> SEQUENCE: 8
87 gtcgttaatg gcaaaataca gg                                22
89 <210> SEQ ID NO: 9
90 <211> LENGTH: 808
91 <212> TYPE: DNA
92 <213> ORGANISM: Helicobacter pylori
94 <220> FEATURE:
95 <221> NAME/KEY: misc_feature
96 <222> LOCATION: (1)...(808)
97 <223> OTHER INFORMATION: n = A,T,C or G
99 <400> SEQUENCE: 9
100 taatttttaga caagcgggtg gagtttgcgc catgcggggtt attttgagat aaattgatga 60
W--> 101 gaattttttta tagagagaat ttttaaaatg agtcnaagta aaaaagaggtt atttttggaa 120
102 cttgcacaac ctgataaaaa tggggtgagt cgttgggtaa gcgttagaga attttaggg 180
103 aaatatcaag gattacagct aggtaatggg ggagttgggtg taggaataac tcatctttag 240
104 ctaaagaatt taattttggag tttgataaag ggcaaactct agggaatttt attgatagaa 300
105 tacgcttgaa tggctataat accgaatgtg tttttaacca aagtatctgt caagacatta 360
106 aaaaccacta taagccacaa tgttgcgcga tgtgtggtgt gcgtggcaac tctgaaaaca 420
107 ctcaaataga agtggatcat aaagacggcc gcaaggatga tttaagagtt tctgattcaa 480
108 acgcacagac ttttgatgat tttcaggctt hatgcaaagc ttgtaatgat aagaaacgcc 540
109 agatttgtaa agaattgcaa gagactggct atagatttga tgcaagaaaa atncctggca 600
110 atcattattc thnctatgaa ggggaggctg aatatgacgg ctgtgtgggt tgctatcaat 660
111 atgaccccat acaatacagg aaaacttgta atgataggat atacaatgaa gggatatcaa 720
112 aaggctatgg tgatgggtat caaattggat accatcaaaa aactacttta tagcggttgc 780
113 aatgaactac atcggtcta aatacaag                                808
115 <210> SEQ ID NO: 10
116 <211> LENGTH: 40
117 <212> TYPE: DNA
118 <213> ORGANISM: Helicobacter pylori
120 <400> SEQUENCE: 10
121 accttgaccc ggcgcctgtt taaccagtt cataccgtaa                                40
123 <210> SEQ ID NO: 11
124 <211> LENGTH: 815

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125 <212> TYPE: DNA
126 <213> ORGANISM: Helicobacter pylori
128 <220> FEATURE:
129 <221> NAME/KEY: misc_feature
130 <222> LOCATION: (1)...(815)
131 <223> OTHER INFORMATION: n = A,T,C or G
133 <400> SEQUENCE: 11
134 taatttttaga taagcgggtg gagtttgccg catgcggggtt attttgaaat aaattgatta 60
135 gaattttatga aatttttatag agagaatttt aaagatgaat aaaagtaaaa aagagttatt 120
136 tttggaactt gcacaacctg ataaaaatgg ggtgagtcgt tgggtaagcg ttavagaatt 180
137 tgtagbaaaa taccaaggat tacagctagg taatggggga gttggtgtag gaacaactca 240
138 tcttttagcta aagaatttaa tttggagttt gataaagggc aaactctagg aaattctatt 300
139 gatagaatac gcttgaatgg ctacaatacc gaatgtgttt ttaaccaaag tatccgtcaa 360
140 gacattaaaa accactataa gcaacaatgt tgcgcgatgt gcggtgcgcg cggcaactct 420
141 gaaaacactc aaatagaggt ggatcataaa gacggccgca aggatgattm aagagtttct 480
142 gattttaagca cacaagcttt tgatgatttt caggctttgt gtaaagcttg taatgataag 540
143 aaacgccaga tttgtaaaga atgcaaagag actggctata gatttgatgc aagaaaaatt 600
144 cctggcaatc attattcttt ctatgaaggg gaggctgaat atgacggctg tgtgggttgc 660
145 tatcaatatg accccatata atacaggaaa acttgtaatg ataggatata caatgaaggg 720
W--> 146 tatcaaaaag gctattatga ggggtatcaa attggatacn atcaaaanac tactttatag 780
147 cggttgtaat gaactacatc ggttctaaat acaag 815
149 <210> SEQ ID NO: 12
150 <211> LENGTH: 127
151 <212> TYPE: PRT
152 <213> ORGANISM: Helicobacter pylori
154 <220> FEATURE:
155 <221> NAME/KEY: VARIANT
156 <222> LOCATION: (1)...(127)
157 <223> OTHER INFORMATION: Xaa = Any Amino Acid
159 <400> SEQUENCE: 12
160 Met Cys Gly Ala Arg Gly Asn Ser Glu Asn Thr Gln Ile Glu Val Asp
161 1 5 10 15
W--> 162 His Lys Asp Gly Arg Lys Asp Asp Xaa Arg Val Ser Asp Leu Ser Thr
163 20 25 30
164 Gln Ala Phe Asp Asp Phe Gln Ala Leu Cys Lys Ala Cys Asn Asp Lys
165 35 40 45
166 Lys Arg Gln Ile Cys Lys Glu Cys Lys Glu Thr Gly Tyr Arg Phe Asp
167 50 55 60
168 Ala Arg Lys Ile Pro Gly Asn His Tyr Ser Phe Tyr Glu Gly Glu Ala
169 65 70 75 80
170 Glu Tyr Asp Gly Cys Val Gly Cys Tyr Gln Tyr Asp Pro Ile Gln Tyr
171 85 90 95
172 Arg Lys Thr Cys Asn Asp Arg Ile Tyr Asn Glu Gly Tyr Gln Lys Gly
173 100 105 110
174 Tyr Tyr Glu Gly Tyr Gln Ile Gly Tyr Xaa Gln Xaa Thr Thr Leu
175 115 120 125
178 <210> SEQ ID NO: 13
179 <211> LENGTH: 812
180 <212> TYPE: DNA

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181 <213> ORGANISM: Helicobacter pylori

183 <400> SEQUENCE: 13

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184 taatttttaga caagcggttg gagtttgtgc catgcggggtc attttgaggt aaattgatta 60
185 gaatttttta tagagagaat tttaaagatg aataaaagta aaaaagaggt atttttggaa 120
186 ctgcacacaac ctgataaaaa tgggggtgagt cgttgggtaa gcgttacaga attttagtaga 180
187 aaataccaag gattacagct aggtaatggg ggagttgggtg caggaataac tcatttttgg 240
188 ctaaagaatt taaattagaa tttgataaaag ggcaaaactct aggaaattct attgatagaa 300
189 tacgcttgaa tggctataat accgaatgtg tttttaacca aagtatccgt caagacatta 360
190 aaaaccacta taaacaacaa tggtgcacta tgtgcgggtg acacggcaac tccgaaaaca 420
191 ctcaaataga ggtggatcat aaagacggcc gcaaggatga ttcaagaggt tctgatttaa 480
192 gcacacagac ttttgatgat tttcaggctt tatgcaaagc ttgtaatgac aagaaacgct 540
193 agatttgtaa agaattgcaa gagactggct atagatttga cgcaacaaaa attcctggca 600
194 atcattatcc tttctatgag ggggtggctg aatatgctga atatgatggt tgtgtgggtt 660
195 gttatcaata tgaccccata caatacaaga aaacttgtaa tgataggata tacaatgaag 720
196 ggcatacaaaa aggttatgat gaggggtatc aaattggata ccatcaaaaa actactttat 780
197 aacggttgca atgaactaca tcggtctaata ac 812

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199 <210> SEQ ID NO: 14

200 <211> LENGTH: 129

201 <212> TYPE: PRT

202 <213> ORGANISM: Helicobacter pylori

204 <400> SEQUENCE: 14

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205 Met Cys Gly Ala His Gly Asn Ser Glu Asn Thr Gln Ile Glu Val Asp
206 1 5 10 15
207 His Lys Asp Gly Arg Lys Asp Asp Ser Arg Val Ser Asp Leu Ser Thr
208 20 25 30
209 Gln Thr Phe Asp Asp Phe Gln Ala Leu Cys Lys Ala Cys Asn Asp Lys
210 35 40 45
211 Lys Arg Ile Cys Lys Glu Cys Lys Glu Thr Gly Tyr Arg Phe Asp Ala
212 50 55 60
213 Thr Lys Ile Pro Gly Asn His Tyr Pro Phe Tyr Glu Gly Val Ala Glu
214 65 70 75 80
215 Tyr Ala Glu Tyr Asp Gly Cys Val Gly Cys Tyr Gln Tyr Asp Pro Ile
216 85 90 95
217 Gln Tyr Lys Lys Thr Cys Asn Asp Arg Ile Tyr Asn Glu Gly His Gln
218 100 105 110
219 Lys Gly Tyr Asp Glu Gly Tyr Gln Ile Gly Tyr His Gln Lys Thr Thr
220 115 120 125
221 Leu

```

225 <210> SEQ ID NO: 15

226 <211> LENGTH: 787

227 <212> TYPE: DNA

228 <213> ORGANISM: Helicobacter pylori

230 <400> SEQUENCE: 15

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231 taattctaga caagcggttg agctaatttg cgcgatgcgg gttattttga gataaattga 60
232 tttaatttta tgaaatttta aagtaaaaaa gagttatttt tggaactcgc acaacctgat 120
233 aaaaatgggg tgagtcggtt ggtaagcggt acagaatttg taggaaaata ccaaggatta 180
234 cagctaggta atgggggagt tgggtcagga acaactcatc tttggctaaa gaatttgaat 240
235 ttgataaagg gcaaaactcta ggaaattcta ttgatagaat acgcttgaat ggctataata 300
236 ccgaatgtgt ttttaaccaa agtatccgtc aagacattaa aaaccactat aagcaacaat 360

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```

237 gttgcgcgat gtgcggtgtg cgtggcaatt ctgaaaacac tcaaatagag gtggatcata 420
238 aagacggccg caaaaatgat tcaagagttt ctgattcaaa cgcacagact tttgatgatt 480
239 ttcaggcttt atgcaaagct tgtaatgaca agaaacgcca aatttgtaaa gaatgcaaag 540
240 agactggcta tagatttgat gcaacaaaaa ttcctggcaa tcattattct ttctatgaag 600
241 gggaggctga atatgacggc tgtgtgggct gttatcaata tgaccccata caatacaaga 660
242 aaacttgtaa tgataggata tacaatgaag ggtatcaaaa aggctattat gaggggtatc 720
243 aaaatggata ccatcaaaaa actactttat agcggttgca atgaactaca tcggctctaa 780
244 atacaag 787
246 <210> SEQ ID NO: 16
247 <211> LENGTH: 127
248 <212> TYPE: PRT
249 <213> ORGANISM: Helicobacter pylori
251 <400> SEQUENCE: 16
252 Met Cys Gly Val Arg Gly Asn Ser Glu Asn Thr Gln Ile Glu Val Asp
253 1 5 10 15
254 His Lys Asp Gly Arg Lys Asn Asp Ser Arg Val Ser Asp Ser Asn Ala
255 20 25 30
256 Gln Thr Phe Asp Asp Phe Gln Ala Leu Cys Lys Ala Cys Asn Asp Lys
257 35 40 45
258 Lys Arg Gln Ile Cys Lys Glu Cys Lys Glu Thr Gly Tyr Arg Phe Asp
259 50 55 60
260 Ala Thr Lys Ile Pro Gly Asn His Tyr Ser Phe Tyr Glu Gly Glu Ala
261 65 70 75 80
262 Glu Tyr Asp Gly Cys Val Gly Cys Tyr Gln Tyr Asp Pro Ile Gln Tyr
263 85 90 95
264 Lys Lys Thr Cys Asn Asp Arg Ile Tyr Asn Glu Gly Tyr Gln Lys Gly
265 100 105 110
266 Tyr Tyr Glu Gly Tyr Gln Asn Gly Tyr His Gln Lys Thr Thr Leu
267 115 120 125
270 <210> SEQ ID NO: 17
271 <211> LENGTH: 818
272 <212> TYPE: DNA
273 <213> ORGANISM: Helicobacter pylori
275 <400> SEQUENCE: 17
276 taattctaga caagcgggtg agctaatttg cgccatgcgg gttattttga aataaattga 60
277 ttagaattta tgaaatttta tagagagaat tttaaagatg aataaaagtm aaaaagagtt 120
278 atttttggaa ctgcacaaac ctgataaaaa tggggtgagt cgttgggtaa gcgttacaga 180
279 ttttaaagaa aaatatcaag gattacagct aggttaattgg ggagttggtg taggaataac 240
280 tcatcttttg ctaaaaaatt tatattagaa tttgatagag agcaaactcc agggaattct 300
281 attgatagaa tacgcttgaa tggttataag actagagggtg tttttaacca aagtatccgt 360
282 caagacatta aaaaccacta taagcaacaa tgttggtgca tgtgcggtgt gcgtggcaat 420
283 tctgaaaaca ctcaaataga ggtggatcat aaagacggcc gcaaggatgg ttcaagagtt 480
284 tctgatttaa acacacagac ttttgatgat ttccaagctt tatgcaaagc ttgtaacgac 540
285 aagaaacgcc agatttgtaa aaaatgcaaa gaaagtggct atagatttga cgcaacaaaa 600
286 attcttggca atcattatcc tttctatgag ggggaggttg aatatgatgg ctgtgtgggc 660
287 tgttaccagt atgaccccat acaatacagg aaaacttgta atgataggat atataatgaa 720
288 ggctatcaaa aaggctatta tgatgggtat caaattggat ataatacaaa gactatttta 780
289 tagcggttgc aatgaactac atcggtctta aatacaag 818
291 <210> SEQ ID NO: 18

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/554,151B

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:9; N Pos. 95,593,613
Seq#:11; N Pos. 760,768
Seq#:12; Xaa Pos. 25,122,124
Seq#:19; N Pos. 16,609
Seq#:20; Xaa Pos. 30,75,124
Seq#:23; N Pos. 15
Seq#:24; Xaa Pos. 16,31,32
Seq#:25; N Pos. 16,197
Seq#:31; N Pos. 477,694,709,710
Seq#:33; N Pos. 52,640,662,669
Seq#:36; Xaa Pos. 14,33,35,56
Seq#:37; N Pos. 16,749
Seq#:41; N Pos. 543,616,708,801
Seq#:47; N Pos. 414,670
Seq#:48; Xaa Pos. 38
Seq#:65; N Pos. 13,56
Seq#:76; Xaa Pos. 103,104

VERIFICATION SUMMARY

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Input Set : A:\seqlist.txt

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L:101 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:60
M:341 Repeated in SeqNo=9
L:146 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:720
L:162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:16
M:341 Repeated in SeqNo=12
L:326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:0
M:341 Repeated in SeqNo=19
L:354 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:16
M:341 Repeated in SeqNo=20
L:424 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:448 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
M:341 Repeated in SeqNo=24
L:477 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
M:341 Repeated in SeqNo=25
L:586 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:420
M:341 Repeated in SeqNo=31
L:621 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:0
M:341 Repeated in SeqNo=33
L:690 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
M:341 Repeated in SeqNo=36
L:711 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
M:341 Repeated in SeqNo=37
L:808 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:540
M:341 Repeated in SeqNo=41
L:919 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47 after pos.:360
M:341 Repeated in SeqNo=47
L:943 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:32
L:1262 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0
L:1398 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:96